

MASSIVE OPEN ONLINE COURSE (MOOC) INSTRUCTIONAL MODEL

BASED ON COLLABORATIVE LEARNING

SIRIKANYA MANEENIL¹ & SASICHAAI TANAMAI²

¹ Educational Technology, Kasetsart University, Thailand

² Educational Technology, Kasetsart University, Thailand

ABSTRACT

The purposes of the study were to design the Massive Open Online Course (MOOC) instructional model based on collaborative learning and to evaluate the proposed model. The participants were five experts in the instructional model and the MOOC.

The researcher used a purposive sampling method by directly contacted the participants who had experienced in the instructional model and the MOOC areas for at least five years. The research instruments are the MOOC instructional model based on collaborative learning and the MOOC instructional model based on collaborative learning evaluation form. Descriptive statistics was analyzed and the suggestion from the expertise was described.

The results showed that;

(a) The MOOC instructional model based on collaborative learning had two main elements which are xMOOC and collaborative learning. The subcomponents are activity, media and resources, assessment, learner, self-directed learning, and scaffolding.

(b) The first element, xMOOC, has appropriated (Mean = 4.00, S.D. = 0.00). The second element, collaborative learning, has appropriated (Mean = 4.00, S.D. = 0.00).

(c) All of the participants agreed that the MOOC instructional model based on collaborative learning is appropriate.

KEYWORDS: Massive Open Online Course (MOOC), Instructional Model & Collaborative Learning

Received: Dec 28, 2016; **Accepted:** Jan 24, 2017; **Published:** Jan 28, 2017; **Paper Id.:** IJESRFEB201712

INTRODUCTION

Currently, the idea of education is "Lifelong learning," which based on the education's concept of the United Nations Educational, Scientific, and Cultural Organization (UNESCO). The lifelong learning is not restricted to the classroom but also learning from anywhere and anytime. Nowadays, learning focus on social activities knows as "social learning." Thus, instructors need to have the ability to design the social processes, to help students enjoy learning and love to learn. Collaborative skills are especially important for students to create new knowledge. Collaborative learning is a learning environment that emphasizes on learning together in small groups. The members of the small groups discuss their ideas and work together. Moreover, the development of communication technology was a learning network (e-learning) and online teaching called "MOOC" (Massive Open Online Course). MOOC is an innovative education for people who want freedom to learn, thus students can choose any methods and content to learn. MOOC supports the concept of lifelong learning or informal education (Panich, 2012; Murray, 2013).

STATEMENT OF PROBLEM

Although MOOC is an innovative study that is prevalent worldwide, at the same time there are many problems with using MOOC especially the high drop-out rate. There are many reasons for the high drop-out rate such as students are diverse in terms of their ability to learn, their ability to use tools to communicate, and their aptitude to learn differently. The reasons for drop-out problem that involve with instructors are designing lessons, teaching materials, teaching methods, lacking resources, and lacking interaction. (Milligan, Littlejoh, & Margaryan, 2013; Keramida. 2015; Quora, 2015,).

Collaborative learning is a teaching technique that responds to lifelong learning. Additionally, development of communication technology lead the researchers interested to design pattern of learning that combines technical instruction, learning network that supports the concept of lifelong learning, and collaborative skills. This brings the researchers to study the MOOC instructional model based on collaborative learning in hope to reduce the drop-out problems and help students succeed in learning on the MOOC.

RESEARCH OBJECTIVES

The study aims to 1) design the MOOC instructional model based on collaborative learning and 2) to evaluate and certification the MOOC instructional model based on collaborative learning.

REVIEW LITERATURE

The theoretical concepts about instruction on the MOOC based on collaborative learning are detailed as follows:

Instructional System Design

Instructional system design is a planned to organize a teaching process based on the knowledge of elements of learning process, purposes of learning, instruction media, measurement, and evaluation of learning. Instructional system design led to the decision to make the acquisition system which composes of input factors and output factors. Examples of input factors are analyze of the students, state the purpose of learning, and specify the content, learning materials, and learning resources. The input factors including design the instruction, decide strategies and teaching techniques, create instruction media, and evaluate. Example of output factors are using the instruction media, publishing the instruction media, evaluating, and reflecting.

Instructional on MOOC

MOOC is an online teaching model that is open for group classes. Students in MOOC can pick the content that they are interested in learning, which MOOC uses a variety of instruction media such as meeting, debating, presenting, and interacting. The instructional model on MOOC focuses on connecting knowledge from different sources (node), and then expansion or creation a new knowledge. Finally, students will get the elements of MOOC, platform, media, resources, and activity (Klaisang, 2013; Globalvision, 2013; Spector, 2014; Claffey Jr, 2015).

Collaborative Learning

Collaborative learning is a learning process that focuses on the cooperation activities among students in order to discuss ideas and exchange knowledge. Collaborative learning normally divides students into a small group, and each member of the group has his/her own duty. However, students strive to achieve the goals of the group. In this study, the researchers selected two teaching techniques for designing MOOC instructional model. First, "Peer editing" is a critical

review, and then provide feedback to the author of the assignment. Second, “Think-Pair-Share” is the idea of the student, compared to the idea of his/her friend, and then share his/her idea to the classroom. Moreover, the researchers also used the scaffolding technique in this study as well. The scaffolding is the advising and assisting techniques between teachers and students or in the students group, while the students are in the joint development area. The goal of scaffolding is that the students can build on their knowledge or get the higher development (Tiantong, 2012; Barkley, Major, & Cross, 2014).

Social Constructivist

Social constructivist is a self-creating knowledge process through the social process. The principle of social constructivist is the students will develop their ideas through a process of interaction among the students. Each student will use his/her background knowledge in order to connect to the current knowledge by discussing, exchanging, and debating among students groups until students can create the new knowledge.

According to the review of literature, the researchers created the conceptual framework as follows:

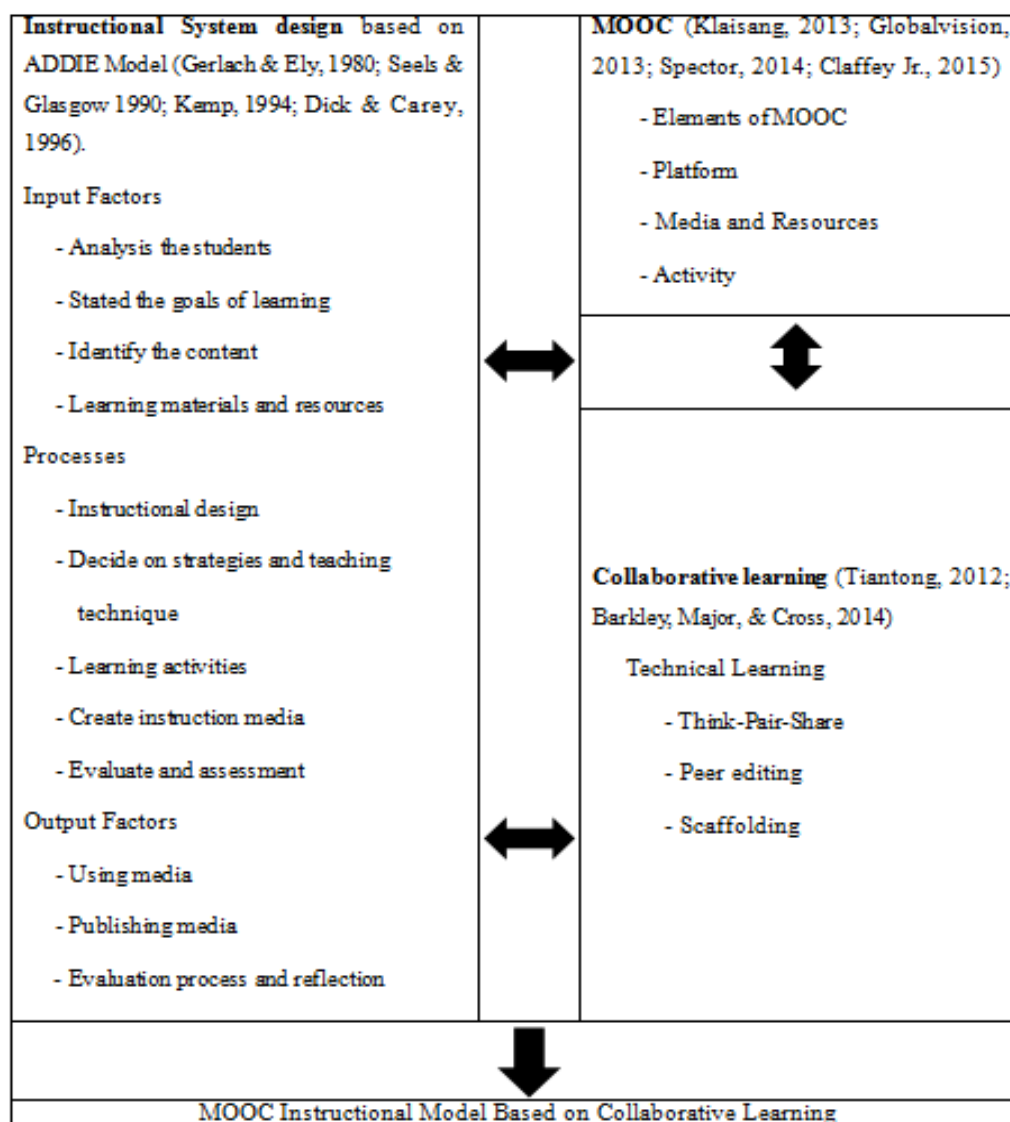


Figure 1: Conceptual Framework

METHODS

Participants

The participants were five experts in instructional design and in MOOC. The researchers accessed the participants using a purposive sampling method by directly contacted the participants who had experienced in the instructional model and the MOOC areas for at least five years.

Instruments

The research instruments are the MOOC instructional model based on collaborative learning and the MOOC instructional model based on collaborative learning evaluation and confirmation form. The evaluation and confirmation form composed of two parts: 5-point Likert scale ratings and open-ended questions. This form assesses the appropriateness of the key components and sub-components of the MOOC instructional model based on collaborative learning.

Collecting Data

- Researchers reviewed literature that related to MOOC, instructional model, and collaborative learning.
- The researchers made appointment with five experts in order to explain the purpose of the evaluation and confirmation the MOOC instructional model.
- The experts evaluated and confirmed the MOOC instructional model on the MOOC instructional model based on collaborative learning evaluation and confirmation form.

Data Analysis

Data were analyzed using descriptive statistics and the suggestions from the experts were described.

RESULTS

- The MOOC instructional model based on collaborative learning has two components:
- The first component is xMOOC. xMOOC reflects the circumstances, environment, and place of study. The first component indicates that this instructional model is organized on xMOOC.
- The second component is collaborative learning. The goal of a collaborative learning is that the students can create new knowledge through social interaction. The collaborative learning focuses on interaction between the students by divided the students into a small group. The instructor tries to mix students with different abilities within the same group. The collaborative learning include:
 - Learning Activities. The learning activities are based on the collaborative learning by using the “Think-Pair-Share” and “Peer editing” techniques.
 - Media and Resources. Media and resources emphasize on the interaction between the students through the collaborative learning activities. The media and resources are composed of”;
 - Instructional media. There are three types of instructional media in this study: publishing instructional media, checking for understanding instructional media, and communicating instructional media.
 - Resources. Resources including content, tools, and capacity to search the information.

- Assessment. The purpose of assessment in this study is assessing the ability of the students, which are formative and summative assessments.
- Learner. The students on MOOC are with large numbers and are diverse. Thus, the instructors should classify the students who attended the MOOC.
- Self-Directed Learning. Self-directed learning focuses on internal factors of students, which helps to support the internal motivation.
- Scaffolding. Scaffolding is the process between the instructors and the students by preparing, advising, and supporting students while they are in the joint development areas. The goal of scaffolding is that the students can build on their knowledge by themselves.

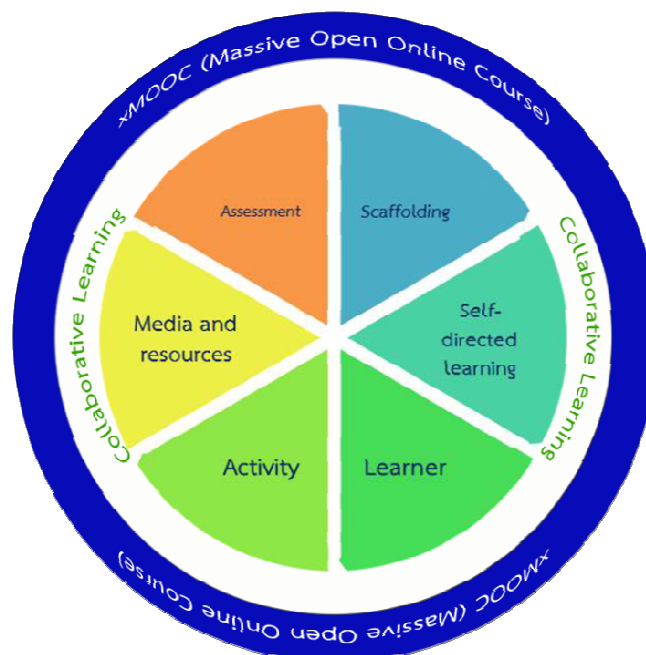


Figure 2: MOOC Instructional Model Based on Collaborative Learning

- The result of evaluation and confirmation on the MOOC instructional model based on collaborative learning found that the first element, xMOOC, has a high appropriated (Mean = 4.00, S.D. = 0.00). The second element, collaborative learning, has a high appropriated (Mean = 4.00, S.D. = 0.00). All of the participants agreed that the MOOC instructional model based on collaborative learning is appropriate and confirmed this model.

DISCUSSIONS

All of the participants evaluated the MOOC instructional model based on collaborative learning at the highest appropriate level. The reason that the model is at the highest appropriate level maybe the researchers start with the study by conducting a literature review, analyze the literature, and synthesis the literature about MOOC, instructional model, and collaborative learning. Therefore, the researchers covered the important components found in the literature to design the model.

The first element, xMOOC, reflected circumstances, environment, and place of study. xMOOC is an indicate that this form of teaching is organized on xMOOC. The designing of the first element based on the analysis and synthesis the main principles of the MOOC. According to the review literature about MOOC, most studies lack an instructional object, feedback, learning activities, and evaluation. Actually, in each type of MOOC will focus on different parts, the designer should identify what type of MOOC the designer wants to design. The components of MOOC that support learning and teaching included learning objects,; feedback, learning activities, and evaluation, which led to the learning goal. The learning objects are the step to search for a solution with and without helping. The researchers designed the xMOOC in this study based on the knowledge objects which led to setting learning goals. The knowledge objects help to validate the accuracy of information and clarify goals, which possible by providing feedback and advising. Thus, the researchers took these principles into the design in order to determine the elements of learning activities, learning techniques, evaluation, and assessment.

The second element, collaborative learning, is a teaching model that emphasizes on interaction between the students. The designing, developing, and implementing online courses are more challenge than regular courses. The learning activities using collaborative learning by divided students into small groups, and mix students with different abilities within the same group will help to promote the cooperation. These learning activities enhance the principles of the zone of development, which is provide the students with more opportunities to succeed.

One of the main problems of MOOC is the high drop-out rate of students. The previous studies found that the reasons for drop-out are the students cannot solve problems in school, lack of helping in learning, and conflict of timing. Therefore, in this study, the researchers provided the sub-component of instruction media and learning resources. In this way, the students can choose the instruction media and learning resources that are appropriate for them from a variety of resources. This will enhance students' motivation to learn, determine how to handle the class, and pick the learning materials that are most appropriate for them.

SUGGESTIONS FOR FUTURE RESEARCH

- The students in a MOOC class is a large group of students so the MOOC class has a variation. The future research may take the massive learner as one of factor into the designing. Thus, the researcher can divide students according to their style learning styles, which may increase the retention rate of in a MOOC class.
- The future research may study and design the learning environment on MOOC in order to increase the interaction and attention of the students.
- The future research may study the factors that affect to the need of learning on MOOC. Additionally, the MOOC factors as an indicator for institution create the curriculum on MOOC. This kind of study will help to spread the educational opportunities and support lifelong learning for students.

REFERENCES

1. Barkley, E. F., Major, C. H., & Cross, P. K. (2014). *Collaborative Learning Techniques a Handbook for College Faculty*. San Francisco: Jossey-Bass A Wiley Brand.
2. Claffey Jr., G. F. (2015). *MOOC Learning and Impact on Public Higher Education*. Doctor of Education Thesis in Education, Northeastern University.

3. Globalvision. (2015, September 23). *Trend Watch: Massive Open Online Courses*. Retrieved from <http://www.globalvision.com.au/archives/1152>
4. Keramida, M. (2015, April 10). *What Is Wrong With MOOCs? Key Issues To Consider Before Launching Your First MOOC*. Retrieved from <http://elearningindustry.com/what-is-wrong-with-moocs-key-issues-to-consider-before-launching-your-first-mooc>
5. Klaisang, J. (2013). *MOOCs pedagogy: from OCW, OER to MOOCs as learning tools for digital learners . Strengthening Learning Quality: Bridging Engineering and Education* (pp. 276-285). Bangkok: Thailand Cyber University.
6. Milligan, C., Littlejohn, A., & Margaryan, A. (2013). *Patterns of engagement in connectivist MOOCs*. *Journal of Online Learning and Teaching*, 9(2), 149
7. Murray, S. (2015, September 22). *What is the Media & Cultural Studies of the MOOC? Response media and culture*. Retrieved from <http://blog.commart.wisc.edu/2013/03/11/MOOC/>
8. Panich, V. (2012). *Learning Pathways for Students in the 21th Century*. Bangkok: Tathata Publication Co., Ltd.
9. Quora. (2016, April 10). *What are some problems with MOOCs?*. Retrieved from <https://www.quora.com/What-are-some-problems-with-MOOCs>
10. Spector, M. J. (2014). *Remarks on MOOCS and Mini-MOOCs*. *Educational Technology Research and Development*, 62(3), 385–392. doi: 10.1007/s11423-014-9339-4
11. Tiantong, M. (2016, March 24). *Collaborative Learning & Cooperative Learning*. Retrieved from [http://suanpalm3.kmutnb.ac.th/teacher/monchai/readdocument\[a\].asp?id=3359](http://suanpalm3.kmutnb.ac.th/teacher/monchai/readdocument[a].asp?id=3359)

